

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) An apparatus for coating an article by immersion of the article in a fluidized powder, the apparatus comprising:

a container defining an interior and a plate separating the interior into a coating chamber and a plenum, the plate perforated by a plurality of pores to provide for passage of a gas from the plenum to the coating chamber; and

a gas supply system connected to the plenum of the container for delivery of a gas to the plenum;

the gas supply system comprising two separate supply portions:

a) a primary fluidizing portion capable of delivering a gas to the plenum in a quantity sufficient to suspend a powdered material in the coating chamber in a fluidized volume; and

b) a controllable pulsating portion capable of providing cyclical pulses of gas, comprising a valve capable of being actuated between opened and closed conditions for respectively enabling and disabling delivery of a controllable supply of gas, to the plenum so as to effect and a corresponding cyclical variation in the fluidized powder volume, said valve being connected to a controller capable of effecting said actuation between opened and closed conditions in an automatically self-cycling manner to provide the cyclical pulses.

2. (Original) The apparatus according to claim 1, wherein the gas provided by the controllable supply portion is compressed air.

3. (Previously Presented) The apparatus according to claim 2, wherein the valve is a solenoid valve and wherein the control system comprises a timer for variably controlling the duration of the cyclical pulses of compressed air.

4. (Previously Presented) The apparatus according to claim 3, wherein the gas supply system further includes a blower connected to the plenum, either directly or via a same inlet as used by the controllable supply portion, for providing a primary supply of air that is supplemented by the controllable supply portion, the blower capable of substantially continuous

delivery of air to the plenum in a quantity sufficient to suspend the powdered material in the coating chamber in a fluidized volume.

5. (Original) The apparatus according to claim 4, wherein the gas supply system further includes a check valve between the blower and the plenum to prevent passage therebetween of compressed air from the controllable gas supply.

6. (Original) The apparatus according to claim 2, wherein the gas supply system includes a pressure regulator for controlling the pressure of the compressed air delivered to the plenum.

7. (Previously Presented) The apparatus according to claim 1 wherein the controller for controlling the valve of the gas supply system comprises a limit switch operably connected to the control system for alternately enabling and disabling the control system from controlling the valve.

8. (Currently Amended) An apparatus for coating an article by immersion of the article in a powdered material suspended in a fluidized condition, the apparatus comprising:

a container defining an interior and including a divider extending across the interior to separate the interior into an upper coating chamber and a lower plenum, the divider perforated by a plurality of pores for passage of a gas from the plenum to the coating chamber; and

a gas supply system including first and second portions, the first portion connected to the plenum and capable of a substantially continuous delivery of a gas in a sufficient quantity for suspension of a powdered material in the coating chamber in a fluidized volume,

the second portion of the gas supply system connected to the plenum, either directly or via a same inlet as used by the first portion, for providing a controllable supply of gas supplementing the fluidizing gas delivered by the first portion, wherein said second portion is a controllable pulsating portion capable of providing cyclical pulses of gas, the second portion comprising a valve capable of being actuated between opened and closed conditions for respectively enabling and disabling delivery of the controllable supply of gas to the plenum so as to effect a corresponding cyclical variation in the fluidized powder volume, said valve being connected to a controller capable of effecting said actuation between opened and closed conditions in an automatically self-cycling manner to provide the cyclical pulses.

9. (Original) The apparatus according to claim 8, wherein the gas delivered by the second portion of the gas supply system is compressed air.

10. (Previously Presented) The apparatus according to claim 9, wherein the second portion of the gas supply system includes a control system for controlling the valve to deliver cyclical pulses of the compressed air to the plenum.

11. (Previously Presented) The apparatus according to claim 9, wherein the second portion of the gas supply system further includes a pressure regulator for variably controlling the pressure of the compressed air.

12. (Previously Presented) The apparatus according to claim 10, wherein the valve is a solenoid valve.

13. (Previously Presented) The apparatus according to claim 12, wherein control system includes a timer operably connected to the solenoid valve, the timer controlling the actuation of the solenoid valve to provide variable control of the duration of the pulses of compressed air.

14. (Previously Presented) The apparatus according to claim 13, wherein the timer is capable of variably controlling both the duration and the frequency of the compressed air pulses.

15. (Original) The apparatus according to claim 12, wherein the second portion of the gas supply system includes a limit switch operably connected to the solenoid valve for controlling the actuation of the solenoid valve.

16. (Previously Presented) The apparatus according to claim 13, wherein the second portion of the gas supply system includes a limit switch operably connected to the timer for alternately enabling and disabling the timer from controlling the solenoid valve, the second portion of the gas supply system further including, in parallel with the solenoid valve, a second solenoid valve and a second timer operably connected to the second solenoid valve for controlling the actuation of the second solenoid valve.

17. (Previously Presented) The apparatus according to claim 8, wherein the first portion of the gas supply system includes a blower.

18. (Original) The apparatus according to claim 17, wherein the gas supply system further includes a check valve between the container and the blower to prevent passage therebetween of compressed air from the second portion.

19. (Withdrawn) A method of coating an article in a coating chamber containing a powder suspended in fluidized state, the method including the steps of:

providing a controllable supply of gas operably connected to a coating chamber for intermittent delivery of gas to the coating chamber and a corresponding variation in a fluidized volume occupied by a powder therein;

controlling the controllable supply for an intermittent delivery of gas and a corresponding variation in the fluidized volume; and

immersing at least a portion of an article into the fluidized powder while the controllable supply of gas is being controlled to vary the fluidized powder volume.

20. (Withdrawn) A method of coating an article in a coating chamber containing a powder suspended in a fluidized state, the method including the steps of:

providing a primary supply of gas operably connected to a coating chamber for substantially continuous delivery of gas to the coating chamber in a sufficient quantity for suspending a powdered coating material in the coating chamber in a fluidized volume;

providing a controllable supply of gas operably connected to a coating chamber for intermittent delivery of gas to the coating chamber;

delivering gas from the primary supply to suspend a powdered coating material in the coating chamber in a fluidized volume;

delivering gas from the controllable supply of gas.

21. (Withdrawn) The method according to claim 20, including the further steps of:

controlling the gas from the controllable supply of gas such that the fluidized volume is cyclically varied;

immersing at least a portion of an article into the fluidized powder while the fluidized volume is being varied; and

removing the article from the fluidized powder.

22. (Withdrawn) The method according to claim 20, including the further steps of:
controlling the gas from the controllable supply of gas such that relatively long duration pulses of gas are directed to the coating chamber to facilitate mixing of the suspended material.

23. (Previously Presented) The apparatus according to claim 1, wherein the gas supply system is capable of delivering the gas to the plenum in a quantity sufficient to suspend a powdered material in the coating chamber in a fluidized volume.

24. (Previously Presented) The apparatus according to claim 1, wherein each of the cyclical pulses is no more than 10 seconds in length.

25. (Previously Presented) The apparatus according to claim 24, wherein a time between each of the cyclical pulses is no more than 10 seconds in length.